E-Learning Learnings from Vocational Education in Victoria, Australia

Investment and innovation to better support industry and learner needs

Skills Development
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INTRODUCTION

Australia's Victorian State Government is committed to providing accessible, high quality, industry and learner-relevant open and distance education for all Victorians. This is critical to ensuring individual prosperity as well as the long term economic growth of the state. E-Learning is a key mechanism used in Victoria to deliver open and distance education, and Victoria's vocational education and training (VET) sector has developed a national reputation for excellence in E-Learning delivery. This paper explains the role of E-Learning in the Victorian Government's VET framework and highlights how one Victorian VET provider has worked with businesses and individuals through E-Learning to make a meaningful difference to Victoria and Victorians.

VET in Victoria

Australia has a federated system of government. While vocational education and training (VET) is a state government responsibility, the regulation of training products is determined at a national level. This approach ensures consistency while also allowing for flexibility to adapt to local needs. This is particularly important in Australia where demographics and industry profiles differ markedly across States. Common goals agreed by all parties are enshrined in a Federal/State funding arrangements that focus on outcomes in the VET sector rather than types of delivery, with states able to allocate resources to produce the best results.

In Victoria, the Minister for Skills and Workforce Participation has oversight of the state's VET system assisted by the Victorian Skills Commission, a committee of industry experts. Skills Victoria, part of the Department of Innovation, Industry and Regional Development, supports these arrangements by providing strategic advice and analysis of Victoria's skill needs and acts as the system managers.

VET is delivered by public technical and further education (TAFE) institutes, adult community education providers (ACE) and private providers. In 2009, calculated per student contact hours delivered, TAFE institutes delivered about 81 per cent of the State's training, ACE providers around eight per cent, and private providers around 11 per cent (Skills Victoria 2010).

In 2009 nearly 550,000 students undertook reported training (which generally excludes that delivered by private providers) in Victoria's VET system (Skills Victoria 2010). There were also more than 77,500 enrolments by international students from 136 countries, with over 50% of students from India and more than 15% from China (Australian Education International 2009). Private registered training organisations provide the majority of training for international students.

The Role of E-Learning in Victoria's VET system

Victoria has been investing in e-learning systematically since the 1990s. Victoria invests A$8 million annually to support national and state E-learning innovations, representing approximately 0.8% of the total Victorian TAFE budget and 0.35% of the national VET budget.

E-learning investment is spent in two main ways. Firstly, Victoria makes a contribution to the key policy advisory group Australian Flexible Learning Advisory Group (FLAG), which was established in 1996 to provide advice on national directions and priorities. FLAG maximises available expertise, produces quality E-Learning materials and delivery systems and enables an Australia wide quality approach to E-Learning. Through the Australian Flexible Learning Framework, FLAG invests nationally A$15 million annually to develop and implement innovative methods of providing open and distance learning. These include Flexible Learning Toolboxes, high quality, cost effective interactive e-learning and assessment resources featuring scenarios, images and activities.

Secondly, Victoria funds its own (non-FLAG) initiatives. These include: the TAFE Virtual Campus, a common virtual learning platform offering a range of E-Learning products and services to teachers, students and organisations; and the E-Learning Grant and the E-Learning Fund, which provide funding opportunities to registered training organisations for projects focused on staff professional development, research or developing teaching resources to support flexible delivery. More than 150,000 learners are registered to study through the TAFE Virtual Campus each year in Victoria, with over 1,800 learning objects available nationally for teachers to share and adapt for teaching purposes.

These initiatives are supported by the state's investment in information technology infrastructure, which is improving education access across Victoria and supporting the acceleration of E-Learning programs for students and employers. This investment includes a A$20 million TAFE Broadband Project, which will provide one Gbps connectivity between Victorian TAFEs by the end of 2010.

A review of Victoria's E-Learning investment in 2009 confirmed that Victoria's support has made training more accessible, especially for people in isolated communities, and has helped to meet the goal of increasing the number of people undertaking training in areas and at levels Victoria needs. The investment has created also opportunities for more interactive and learner-driven training and assisted with work-place based learning. This contributes to the goal of developing a training system that engages more effectively with learners and industry.

Responding to New Challenges

Students today are demanding a more tailored experience that is matched to their learning style and preferences. And employers now demand that employees know more than just subject expertise, with 'soft skills' including technological fluency, e-literacy, collaboration, teamwork, leadership and creative thinking now increasingly important to economic development. These shifts require new ways of teaching and learning that gives responsibility to the learner and changes the role of the trainer from one of a subject matter expert to one with an emphasis on facilitation, support, critical thinking, guidance and entrepreneurialism.

E-learning is a critical component in responding to these challenges. We need to provide teachers/trainers with the right skills to exploit the technical infrastructure that is available to them and ensure Victoria's investment continues to be directed to where it is needed most whilst remaining aligned with Government priorities.

Looking to the Future

Victoria will seek to develop a state E-Learning Strategy to help guide its investment in E-Learning as well as set and monitor expectations. The Strategy will clarify Victoria's vision for E-Learning and make critical decisions, such as how much funding to direct to Victoria's investment in improving performance across the board and whether/how to reward early adopters and/or target less mature VET institutions that struggle with E-Learning.

Victoria will also review the way it measures its return on investment in E-Learning and seek performance measures for its investments that are closely aligned with Government priorities,

An E-Learning Strategy together with effective performance measures will play a critical role in guiding the state's investment in E-Learning and ensure Victoria has a VET system that is able to keep up with rapid changes in technology.

In the following case studies, this paper shows how e-Learning is playing an important role in this transformation in Victoria, enabling providers to be more responsive to the needs of industry and learners.

E-LEARNING DELIVERY AND OUTCOMES – THE GippsTAFE EXPERIENCE

GippsTAFE is a small to medium sized public TAFE institute located in Victoria's south-eastern region. The institute enrols approximately 10,000 students annually who study for a wide range of vocations across five campuses.

The rural and remote nature of townships that GippsTAFE services means the institute has continuously sought to ensure that its programs are offered in the most flexible manner possible. It began using E-Learning technologies in 1998 with the commencement of its first online program in the study area of hospitality. Since then, GippsTAFE's E-Learning programs have grown steadily, with over 4,000 students enrolled annually in one or more of the 400 plus units of study available.

Three practical case studies highlight how GippsTAFE has been able to offer its programs in an online format which (1) is responsive to industry needs (2) improves accessibility for students, and (3) uses pedagogies which lead to increased student retention and completion rates.

Case Study One – Electrical Industry

GippsTAFE is a provider of choice for the training of those working in the electrical sector. The institute was engaged by the company TRUenergy, a major provider of power distribution services within Victoria, to develop customised training to enable it to provide solely online training to staff. GippsTAFE developed the "Team Member" and "Pipeline Installer" online programs.

TRUenergy's business model relies heavily on third parties to provide maintenance services for assets in the TRUenergy power distribution network. As a result, the company required a training solution which could train and assess both its own staff and staff of other companies. In particular, the solution needed to track third party student activity and results, which could then be provided to the individual's direct employer and copied directly to TRUenergy. This system would enable TRUenergy to request tender information from third parties which could include a full list of trained staff within a particular E-Learning solution, and allow TRUenergy to cross reference this list with its own records. In this way TRUenergy could ensure that all individuals working on the energy distribution network received the required specialist training prior to working on the network.

To ensure that the solution met the needs of the client, GippsTAFE instructional and educational designers worked directly with subject matter experts currently engaged by TRUenergy. In addition, E-Learning technical staff worked with the Human Resources department of TRUenergy to ensure that a suitable integration of systems was in place. GippsTAFE developed a roll out strategy and facilitation model for TRUenergy, which encompassed student support. The support is comprehensive and includes access to relevant hardware required to complete the training, access to online and face to face support, and access to trained subject matter experts.

GippsTAFE has found that that the long term success of any E-Learning solution is directly linked to the quality of facilitation which accompanies it. This is why the GippsTAFE is often engaged by clients such as TRUenergy to provide e-services to industry on an ongoing basis.

Case Study Two – Virtual Worlds

While the workplace is often the best environment for acquisition of practical, competency-based skills, activities involving responsibility or risk to the learner, personnel or organisations are difficult to facilitate in the physical space. Virtual worlds, i.e. computer based simulated environments, enable learners to engage in learning solutions for activities involving risk and responsibility, offering valuable insight and experience for workplace application. For the teacher, virtual world technologies offer the opportunity for extensive group collaboration and can be used to support students in remote locations, using proven strategies such as peer-assisted and facilitated online learning. Academics using virtual worlds can also design educational activities for the future, presenting learners with challenging and provocative situations that encourage the use of higher level skills.

In 2006 GippsTAFE began to make use of Virtual Worlds technology within a number of its vocational programs. The Institute's goal was to develop virtual 3D learning spaces which capitalise on high end simulation pedagogies to provide improved learning experiences. An important step in successfully embedding the use of Virtual World technology within GippsTAFE programs was to provide suitable professional development for teachers with the view of enhancing creative pedagogical thinking. Central to this process was that the real world space need not dictate the virtual world, allowing teachers to think freely about the ideal learning space and activity. As a result of this professional development process, the following learning experiences were developed and trialled:

(1) Interior design

For interior design, a program was developed whereby students were required to provide design services to a nominated client avatar within the virtual world. As all interaction undertaken was within the virtual space, the student was not aware of who was controlling the client avatar. This promoted a higher level of professionalism than in face to face role play situations. In addition, the virtual world role play was conducted within a three dimensional space which represented a building nominated by the teacher and this unfamiliarity also added to the realism of the role play.

Students were then given a formal assessment task, regardless of whether they had participated in the virtual world space or undertook the traditional face to face learning process. All students who completed the virtual learning experience achieved higher results than students who undertook the traditional method of learning.

(2) Diploma of Alcohol and Other Drugs

The second group of students to participate in a virtual world trial were undertaking the Diploma of Alcohol and Other Drugs. A key learning outcome for a student undertaking this Diploma is to develop the skills required to administer a national client assessment tool in order to inform the case manager about the level and seriousness of client addiction.

Traditionally this learning would make heavy use of face to face role play within the learning process. However teachers making use of this learning strategy found students had difficulty connecting in a meaningful way during this process.

As a result, role plays within the course were moved into the virtual world space, with anonymous avatars and a virtual environment designed to duplicate the real world. The realism of the virtual world was also enhanced by creating a building which housed the assessment office, in addition to a room for client assessment. This meant that avatar clients where required to navigate their way through a building and process prior to engaging the assessment experience. This included reporting to reception, sitting with strangers within the waiting areas and being exposed to the behaviour of others while waiting for their appointment. These additional aspects of the role would be difficult to create in a face to face space.

At the conclusion of these pilot programs evaluations found that both teachers and students reported significantly improved learning outcomes while consistently indicating that the virtual world gives "a realer experience" than face to face studies. As a result of positive experiences achieve using virtual worlds technology, GippsTAFE now has six different study areas engaged in the virtual world space.

Case Study Three – Improved accessibility for those with a disability

GippsTAFE is committed to ensuring that all students are able to access training in a format which meets their learning needs. At GippsTAFE, students who have a disability are able to engage in programs designed to allow them to improve their general life skills through highly interactive audio visual materials developed for this learning group.

A key learning outcome for the students is to develop the basic skill of following a recipe accurately while preparing a meal. Although this skill is basic, it is a skill that many students with a disability may struggle with, because these students are not able to interpret instructions by simply reading directions but need a method of learning which provides demonstration. GippsTAFE has been able to achieve this by working with students to enable them to create their own multi-sensory learning objects. Learning activities allow students to read instructions, have instructions read to them via voice enabled webtools and/or view demonstrations created via the use of multimedia animation. Given the online nature of these learning objects, a student is able to work through learning materials at a pace which suits them, as well as having the ability to repeatedly view learning objects as required. As the learning objects are viewable via the internet, students are also able to access these learning materials within their own home while they are preparing meals.

Another skill students are also required to develop is the ability to independently navigate themselves from one location (e.g. their home) to a second location (e.g. their place of work). To assist students to achieve this goal, they are assisted by the teacher to create digital stories for mobile learning devices. These digital stories consist of a series of images, animations and voice instructions detailing an appropriate route. By requiring students to create their own learning objects, rather than relying on GPS technologies, the students gain a significantly higher understanding of geographical awareness because they are required to undertake more advanced thinking processes.

An important additional method of support offered to students is the ability to communicate remotely with teachers. This is achieved through the use of Wimba Voice technologies, which allow for both asynchronous voice discussion boards and synchronous voice chat rooms. These tools provide students with the ability to leave non real time voice messages for the purpose of seeking teacher clarification. Furthermore students have the ability to request a real time voice discussion with teachers at a time which is suitable for the student. This approach to supporting students overcomes the need for travel and brings the support to the students at home, allowing for improved contextual learning experiences.

SUMMARY

The Victorian investment in E-Learning helps fund and deliver innovative approaches to learning like those described at GippsTAFE. Victoria's investment in E-Learning has enhanced social justice and the economic development of the region via the use of innovative open and distance education thus making training more accessible, including for citizens in geographically isolated communities. Through E-Learning Victoria is helping to meet its goal of increasing the number of people undertaking training in areas and at levels which Victoria needs. The State continues looking forward to the best ways to embed e-learning into the delivery of vocational skills to meet the needs of business and individuals.

REFERENCES

Australian Education International (2009). Annual International Student Statistics. Australian Government. Canberra.

Dandolo Partners (2009). A review of the Victorian Government's investment in E-Learning in the Vocational Education and Training system. Melbourne.

Invest Victoria (2010). 'Information and communication technology', *Invest Victoria*. Accessed August 2010 from <http://www.invest.vic.gov.au/InformationTechnology>

Skills Victoria (2010) Student Statistical Data Collection. Government of Victoria. Melbourne.